ACHIEVING SCALE IN AGRICULTURE

Past Efforts, Present Promise

DISCUSSION PAPER

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Past Efforts, Present Promise

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Achieving "scale" in behavior change and/or the adoption of new technologies has long been the desire of international development practitioners. By scale, we mean the widespread adoption of new behaviors or technologies in a given society by working with stakeholder groups of thousands, or even tens of thousands, rather than tens or hundreds. Within the field of international development, the health sector has perhaps been the most successful in reaching scale with its efforts, as is evident in increased immunization rates, improved water safety and sanitation efforts, and eradication or reduction of disease. By contrast, scale has remained elusive for much of the agriculture and natural resource sectors.

Despite the widespread adoption of new hybrid varieties of rice, maize, and other staple crops during the green revolution of the 1960s and 1970s, the agriculture and natural resource sectors have seen low adoption rates of other practices required for increased crop production. Efforts to understand the reasons for these low rates and to develop new models of information dissemination for behavior change began in the late 1980s and earlier and have recently assumed renewed prominence with the introduction of new information and communication technologies (ICTs) in developing countries.

ICT-based development initiatives from the past several years include the Communication for Technology Transfer in Agriculture (CTTA) and GreenCOM programs,[1] a study called *Scaling Up the Impact of Agroforestry Research*,[2] and Agricultural Knowledge and Information Systems for Rural Development (AKIS/RD).[3] These initiatives built upon earlier models of community and participatory development to create new methods of reaching a wider audience for effective and lasting change.

This paper provides an historical overview of efforts to achieve scale in agricultural extension, examining the role of previous extension methods and their limitations for achieving scale. With this backdrop in mind, it highlights new efforts and methods for "scaling up" in agricultural development, looking in particular at SCALE, an approach that is being applied through Agricultural Partnerships for Productivity and Prosperity (AP[3]), a recent USAID initiative that operates under the auspices of the GreenCOM project.

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[1] Funded by USAID and implemented by the Academy for Educational Development.

[2] P.J.M. Cooper and G. L. Denning, *Scaling Up the Impact of Agroforestry Research: Report of the Agroforestry Dissemination Workshop, 14–15 September 1999, Nairobi, Kenya* (Nairobi: International Council for Research in Agroforestry [ICRAF], 2000).

[3] Implemented by the Food and Agriculture Organization of the United Nations (FAO) and World Bank.

Historical Overview of Efforts to Achieve Scale

Agricultural extension has traditionally been the purview of national ministries of agriculture in much of the developing world. Those agencies often modeled their extension programs on Western methods that focused on extension agents providing training on an individual or group basis, followed by field visits to ensure correct adoption of new practices. Unfortunately the ministries were often unable to fund, staff, or provide the materials required for adequate nationwide extension services. Twenty years after the initial successes of the green revolution, extension agents in much of the developing world faced smaller budgets and larger areas of coverage, a situation that led to disintegration of morale and increasingly ineffective national extension programs. Throughout the 1980s and 1990s, there was a continued trend of divestment from national agriculture programs and increasing government ineffectiveness in supporting extension. The challenge for contemporary development practitioners is to work within existing extension systems while simultaneously implementing new approaches to take agricultural development to scale. In this section, we briefly explore early efforts to achieve scale and the underlying reasons for their failure. We also examine some more recent approaches and their prospects for success.

Traditional Extension Methods

Traditional extension methods followed a top-down direction of implementation (Figure 1) that consisted of researchers and extension agents directing farmers on the adoption of new practices. Although this approach was successful during the green revolution and resulted in widespread, rapid dissemination of new hybrid seed varieties, it began to break down in the 1970s and 1980s as national budgets became increasingly constrained. New development paradigms also came into vogue at that time,

FIGURE 1

TRADITIONAL MODEL
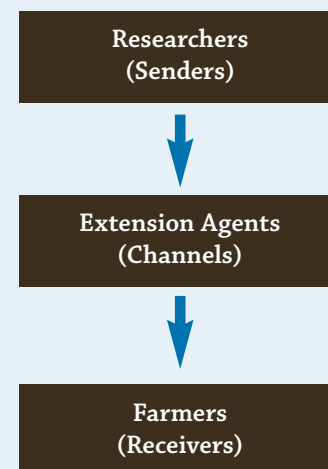
Researchers (Senders) → Extension Agents (Channels) → Farmers (Receivers)

Source: Academy for Educational Development (AED), *Communication for Technology Transfer in Agriculture (CTTA) Project: Final Report* (Washington, DC: AED, 1992), 2.

diverting money away from rural and agricultural initiatives and toward urban development and industrialization. The collapse of many developing country economies and the rising costs of debt repayment contributed to the failure of traditional extension as well.

In addition, many of the recommendations suggested by traditional extension research in Western countries proved inappropriate when applied in developing countries, where extension agents tried to "adapt" Western technologies without full consideration of the host countries' social and environmental constraints and requirements. Moreover, large numbers of rapidly recruited extension field staff in the host countries were inadequately trained and the overall management of programs was poor. When some new methods and seeds introduced by extension workers failed, public confidence in national extension systems began to erode. This dearth of confidence, combined with budget and time constraints on extension agents, resulted in a disillusioned populace, the near collapse of many extension systems, and a move by the governments of many developing countries away from large-scale agricultural extension efforts. An attempt at reform was made through an infusion of funds and improved program management by the World Bank through its training and visit (T&V) system,[4] which added money to financially strapped institutions for increased extension agent coverage and greater attention to farmer input in the implementation of new cultural practices.

World Bank Assessment of T&V

During the 1980s and 1990s, the World Bank pursued an aggressive support program for T&V extension in Africa. Building on the perceived successes of an early program in Kenya, the bank expanded its support to twenty-two other African countries with a total commitment of more than $700 million. A 1993 study on the Kenyan program estimated returns of 160 to 350 percent and 91 percent for a similar program in Burkina Faso. The World Bank used this analysis to justify the expansion of its T&V program despite many borrower countries' growing disenchantment with T&V and its reported high cost to rate of return. Indeed, a follow-up study conducted by the bank confirmed that much of the reported return to investment cited in the 1993 study was incorrect.[5] After revisiting the data sets of the original study and reformulating models and data groupings, the new study found that there was no discernable benefit from the World Bank's T&V program. This review, combined with anecdotal evidence from recipient countries, served to further highlight the limits of T&V and other traditional methodologies for extension.

"When some new methods and seeds introduced by extension workers failed, public confidence in national extension systems began to erode."

Communication for Technology Transfer in Agriculture

In 1985 USAID launched a program called Communication for Technology Transfer in Agriculture (CTTA). The program had three objectives:[6]

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[4] Madhur Gautam and Jock R. Anderson, *Reconsidering the Evidence on Returns to T&V Extension in Kenya*, Policy Research Working Paper 2098 (Washington, DC: World Bank, 1999), 2.

[5] Ibid.

[6] Academy for Educational Development (AED), *Communication for Technology Transfer in Agriculture (CTTA) Project: Final Report* (Washington, DC: AED, 1992), 1; AED, *Knowledge Building and Knowledge Sharing to Improve Rural Productivity Agricultural Communications: Lessons Learned and Recommendations for the Future* (Washington, DC: AED, 1993), 1.

1. Apply innovative approaches for using communication, especially mass media, to support agricultural development.
2. Develop, test, and demonstrate multi-channel communication strategies and methods to increase agricultural technology transfer at costs affordable to developing nations.
3. Assist in sustaining project strategies and methods on a national basis.

CTTA's methodology was a radical departure from traditional extension methods and the T&V approach. Where those approaches saw the farmer as the recipient of information and training (Figure 1), the CTTA method gave the farmer a central role in its five-step methodology. This is demonstrated through the circular flow of information shown in Figure 2 that provides all of the actors or stakeholders with a feedback mechanism to communicate with one another. In addition, the farmer is consulted early in the process.
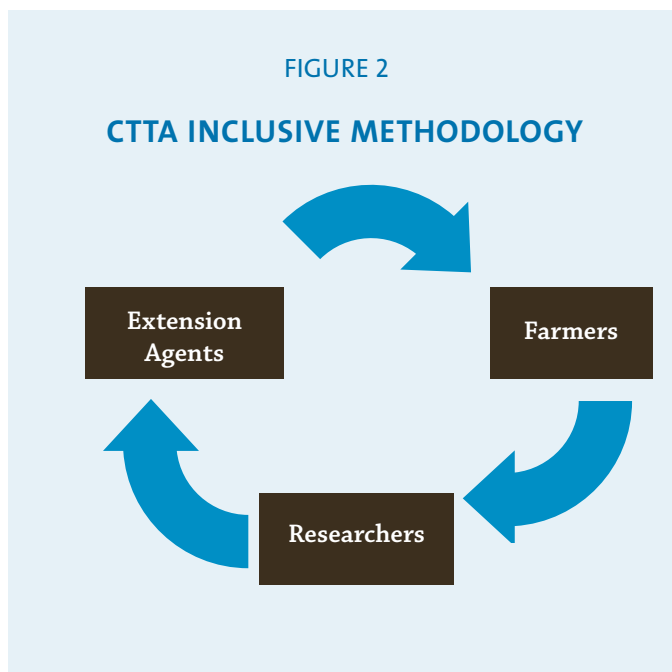
FIGURE 2

CTTA INCLUSIVE METHODOLOGY

Source: Academy for Educational Development (AED), *Communication for Technology Transfer in Agriculture (CTTA) Project: Final Report* (Washington, DC: AED, 1992).

The five steps of CTTA's methodology—applied in Honduras, Peru, Indonesia, Jordan, and Niger—were as follows:

1. Assessment, including:
   • Analyzing client groups and their pre-ferred modes for receiving information.
   • Identifying available and appropriate technologies in consultation with farmers.
   • Gathering information about the adequacy of local support systems (that is, the ability of suppliers, transportation networks, and markets to meet producer needs).
2. Planning and strategy development involving:
   • Identification of the target audience.
   • Design of a comprehensive communica-tion strategy.
3. Materials preparation and message delivery including pretesting and revision.
4. Implementation with continuous monitoring.
5. Evaluation in consultation with farmers.

In general, CTTA was largely successful. By the end of the project, some of the communication methods introduced by the program had been adopted by host country governments, interest in CTTA was created in neighboring countries and other USAID missions, and results in participating countries showed high adoption and dissemination rates for new technologies.

In comparison to conventional extension methods with their top-down approach, CTTA, and even T&V to a degree, provided a more client-centered and adaptable path for

information dissemination. Where CTTA and T&V differ is in the return to cost and numbers of personnel required to implement an "effective" program. According to the proponents of CTTA, the methodology is more adaptable, derived from local needs, and inclusive of all actors compared to conventional extension and T&V methods.

Despite positive results in the countries where it was implemented, as well as large-scale adoption of new agricultural innovations, the CTTA program was discontinued in 1992 after a shift in funding priorities at USAID. However, the CTTA approach was not completely abandoned. The Academy for Educational Development (AED) continued to support the refinement of the methodology, which eventually evolved under USAID's GreenCOM project (also managed by AED) into a new methodology called SCALE, described in the following section. SCALE is now being applied in a USAID/AED collaborative project called Agricultural Partnerships for Productivity and Prosperity, or AP[3].

Current Strategies and Principles

Since 2000, a number of new studies and programs have addressed the issue of taking agricultural innovations to scale in developing countries. This section of the paper outlines current methodologies and identifies commonalities among the different approaches to suggest a single adaptable method for program design and implementation.

World Bank Review

In early 2003 the World Bank published a report that rejected the T&V method and proposed new methodologies for addressing the issue of scale in its investments and extension efforts.[7] Another World Bank report published that year presents a simple three-step model for Community-Driven Development (CDD) (Figure 3),[8] as the means for achieving wider reach of programs. Although not focused solely on agricultural extension, the methodology presented in the report helps to highlight constraints and priorities for taking projects and programs to scale.

At the core of these three simple stages of development is a set of values that not only moves a properly designed program toward greater adoption rates but also ensures its

FIGURE 3

THE THREE STAGES OF COMMUNITY–DRIVEN DEVELOPMENT

1. INITIATION STAGE:
 a. Enhance real participation through a participatory appraisal process.
 b. Target specific groups.
 c. Start a dialogue with stakeholders.

2. SCALING-UP STAGE:
 a. Test and refine all tools in one district.
 b. Determine critical bottlenecks to full implementation.

3. CONSOLIDATION STAGE:
 a. Integrate decentralization and participation.
 b. Move to full national coverage from district level.
 c. Refine and modify program based on experience.
 d. Increase capacity building for participants.
 e. Expand target programs to other areas/issues.

Source: Hans P. Binswanger and Swaminathan S. Aiyar, *Scaling Up Community-Driven Development: Theoretical Underpinnings and Program Design Implications*, Policy Research Working Paper 3039 (Washington, DC: World Bank, 2003), 16–17.

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7 Gautam and Anderson, *Reconsidering the Evidence on Returns to T&V Extension in Kenya*.

8 Hans P. Binswanger and Swaminathan S. Aiyar, *Scaling Up Community-Driven Development: Theoretical Underpinnings and Program Design Implications*, Policy Research Working Paper 3039 (Washington, DC: World Bank, 2003).

economic, social, environmental, and political sustainability. Those values include:

1. Real participation—providing a voice to all stakeholders, which means:
   a. Devolution of authority and resources—putting control over decisions and implementation into local hands.
   b. Stakeholder participation at every stage—design, planning, monitoring, and evaluation.[9]
   c. Communication—presenting the program in a way that provides access to all parties.[10]
   d. Co-financing by communities—increasing community ownership and buy-in.
   e. Technical assistance and facilitation from local and higher levels—assisting the communities in building the capacity to sustain activities over the long term.
   f. Pro-poor market development.
2. Improved accountability.
3. Technical soundness—products derived from locally available materials and tested locally to ensure sustainability.
4. Sustainability (fiscal, asset, environmental, and social).

The CDD stages and values are observable in the earlier methodologies presented in this section.

Neuchâtel Group
Formed in 1995, the Neuchâtel Group is comprised of representatives from the major national development agencies (America's USAID, Britain's DFiD, Denmark's Danida, France's CF, Switzerland's SDC, Germany's GTZ, and the Netherlands' NeDA) as well as representatives of the United Nations Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD), the European Commission, and the World Bank. Through a series of workshops, meetings, and case reviews, the group developed its "Common Framework on Agricultural Extension." The framework provides extension

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FIGURE 4

SIX GUIDING PRINCIPLES OF THE COMMON FRAMEWORK ON AGRICULTURAL EXTENSION

1. A sound agricultural policy is indispensable.
2. Extension consists of "facilitation" as much if not more than "technology transfer."
3. Producers are clients, sponsors, and stakeholders, rather than beneficiaries of agricultural extension.
4. Market demands create an impetus for a new relationship between farmers and private suppliers of goods and services.
5. New perspectives are needed regarding public funding and private actors.
6. Pluralism and decentralized activities require coordination and dialogue between actors.

Source: Neuchâtel Group, *Common Framework on Agricultural Extension* (Paris: Neuchâtel Group, 1999), 10–15.

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[9] An implied and sometimes explicit assumption within all methodologies is that the term "stakeholders" includes underrepresented groups (by gender and ethnicity). When necessary, special methods and programs are designed to facilitate the inclusion of such groups if cultural norms prohibit integration.

[10] Communication strategies include print media, telecommunications, and the Internet.

implementers with a set of six guiding principles[11] (Figure 4) and intervention points to ensure proper development and expansion of extension services.

Based on the six principles, the Neuchâtel Group provides a set of practical proposals for development agencies to pursue in their agriculture extension programs to increase the quality of cooperation and input. Similar to the steps outlined by Binswanger and Aiyar (2003), these proposals do not specifically address or define a methodology for scaling up but instead provide implementing agencies with more practical guidelines to ensure widespread adoption when a program is taken to scale. The practical considerations include the need to:

"This market- and demand-driven approach is a departure from traditional methodologies that view the farmer as a receiver of goods and services."

1. Support negotiated national policymaking between actual stakeholders.
2. Consider the long-term financial viability of agriculture extension activities.
3. Include exit strategies in planning.
4. Facilitate funding of producer initiatives.
5. Ensure that extension activities are supported with training, organizational development, and research.
6. Establish closer coordination between cooperating agencies.

At the core of the Neuchâtel Group's practical programs is a new philosophy of extension that puts the farmer in the role of decision maker on agricultural services and requirements, as did the earlier CTTA

model. This market- and demand-driven approach is a departure from traditional methodologies that view the farmer as a receiver of goods and services (Figure 5).

ICRAF and the FAO
Building on the World Bank's CDD approach and the Neuchâtel Group's common framework, the World Agroforestry Centre (known by the acronym ICRAF) and FAO have developed similar and supporting methods for taking projects to scale and creating lasting extension systems. ICRAF's "Ten Fundamentals of Scaling Up" and FAO's five areas of strategic emphasis share several areas of focus with each other and the previous two methodologies (Table 1).

FIGURE 5

NEW EXTENSION MODEL
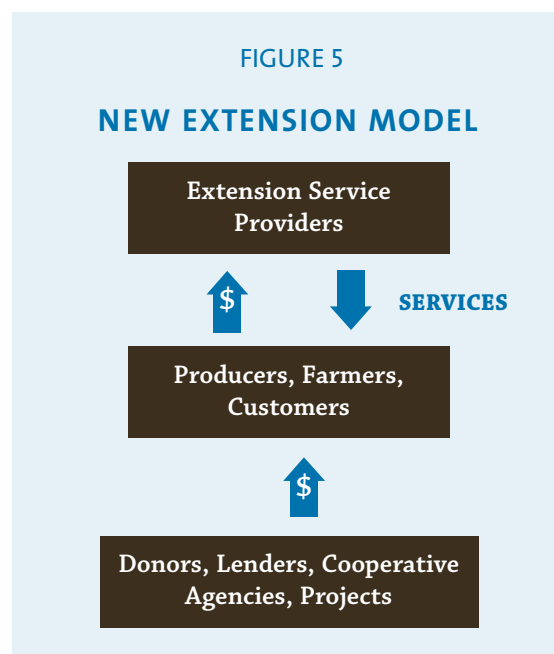
Source: Adapted from Neuchâtel Group, *Common Framework on Agricultural Extension* (Paris: Neuchâtel Group, 1999), 16.

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[11] Neuchâtel Group, *Common Framework on Agricultural Extension* (Paris: Neuchâtel Group, 1999), 10–15.

TABLE 1

FOCI OF ICRAF AND FAO SCALING-UP INITIATIVES

ICRAF	FAO
Ten Fundamentals of Scaling Up:	**Five Areas of Strategic Emphasis:**
A. Technical options B. Farmer-centered research and extension C. Local institutional capacity D. Germplasm E. Marketing F. Policy options G. Learning from successes and failures H. Strategic partnerships I. Knowledge and information sharing J. Facilitating scaling up	A. Making Agricultural Knowledge and Information Systems for Rural Development (AKIS/RD) financially, socially, and technically more sustainable. B. Improving the relevance as well as the effectiveness of the processes of knowledge and technology generation, sharing, and uptake. C. Making AKIS/RD more demand driven through empowerment of farmers, particularly those who are marginalized and disadvantaged, so that they might participate more meaningfully in AKIS decisions and priority setting. D. Increasing integration of the various education, research, extension, and farming activities. E. Building accountability to ensure that each stakeholder assumes his/her respective responsibilities, that performance failures are identified, and that appropriate responses are made.

Source: P.J.M. Cooper and G. L. Denning, *Scaling Up the Impact of Agroforestry Research: Report of the Agroforestry Dissemination Workshop, 14–15 September 1999* (Nairobi: International Council for Research in Agroforestry [ICRAF], 2000), 21–34; Food and Agriculture Organization of the United Nations (FAO) and World Bank, *Agricultural Knowledge and Information Systems for Rural Development (AKIS/RD): Strategic Vision and Guiding Principles* (Rome: FAO and World Bank, 2000), 14.

For example, both programs stress the importance of a farmer-centered, demand-driven approach to extension. Additionally, each of these methods again stresses the importance of continued capacity building (institutional and individual) and increased agency/stakeholder integration and cooperation. An ICRAF program that has successfully employed the ten fundamentals is the "Landcare Movement"[12] in the Philippines with more than two hundred village-based programs, fifteen hundred conservation farms, and more than two hundred community- and household-based tree nurseries. Another success story is an agroforestry research project in southern Africa that involved more than five thousand farmers at on-site research stations and trained an additional twenty-five hundred per year.[13]

Like CTTA and the model proposed by the Neuchâtel Group, FAO's approach gives the farmer a central role in the extension process (Figure 6). The addition of education gives more formal institutions and service providers (such as universities or nongovernmental organizations that provide training) a role in meeting farmers' demands for services. Again, the move is toward greater participation and attention to the end user. Implicit in FAO and other

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12 Cooper and Denning, 7.

13 Ibid., 12.

methodologies previously cited is the agreement that achieving scale is facilitated through a farmer-centered, demand-driven approach to extension. Although none of these methods provides a "road map" to achieving scale, programs designed to fit specific situations and geographical areas that follow the principles outlined in the preceding pages are considered more likely to reach a level of scale.

FIGURE 6
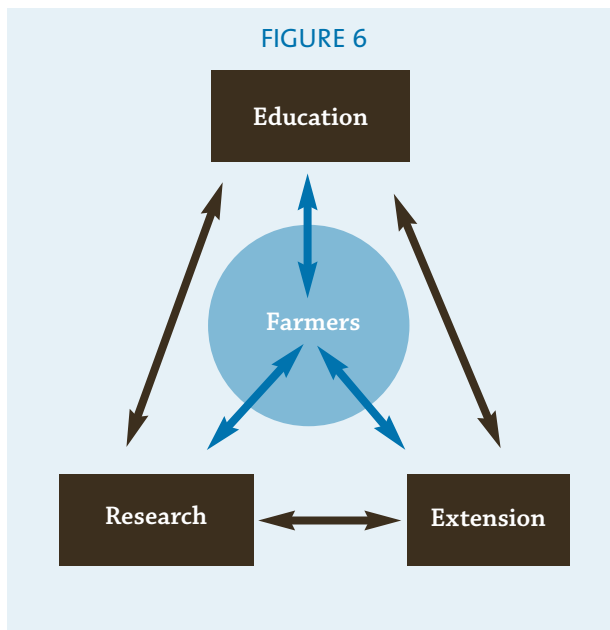
Source: FAO and World Bank, *Agricultural Knowledge and Information Systems for Rural Development (AKIS/RD): Strategic Vision and Guiding Principles* (Rome: FAO and World Bank, 2000), 2.

GreenCOM

With a foundation in CTTA and the methodologies described in the preceding pages, AED developed an approach called System-wide Collaborative Action for Livelihoods and the Environment (SCALE) under the auspices of the USAID-funded GreenCOM project. Designed to promote community development and environmental sustain-ability, SCALE, as the name suggests, provides implementers with a mechanism for achieving scale in development projects. It features a demand-driven approach to project development and a collaborative process that includes all stakeholders affected by an environmental or natural resource issue.

This methodology is premised on the idea that achieving scale is accomplished by increasing the number of individual and group stakeholders—and the linkages among them—who are working simultaneously to negotiate and implement sustainable solutions to a specific problem. (See Figure 7 for an example of maps showing stakeholder linkages created under the GreenCOM project in Panama.) Figure 8 illustrates the SCALE process, which is described in more detail below.

Map the Context

According to the SCALE schema, progress begins not with the diagnosis of a problem or issue, but with an understanding of the context within which a problem or issue is situated. Context refers not only to geographic boundaries but also to the governmental, cultural, economic, and environmental factors that shape the issue(s) and the value and importance placed on the issue by the local populace.
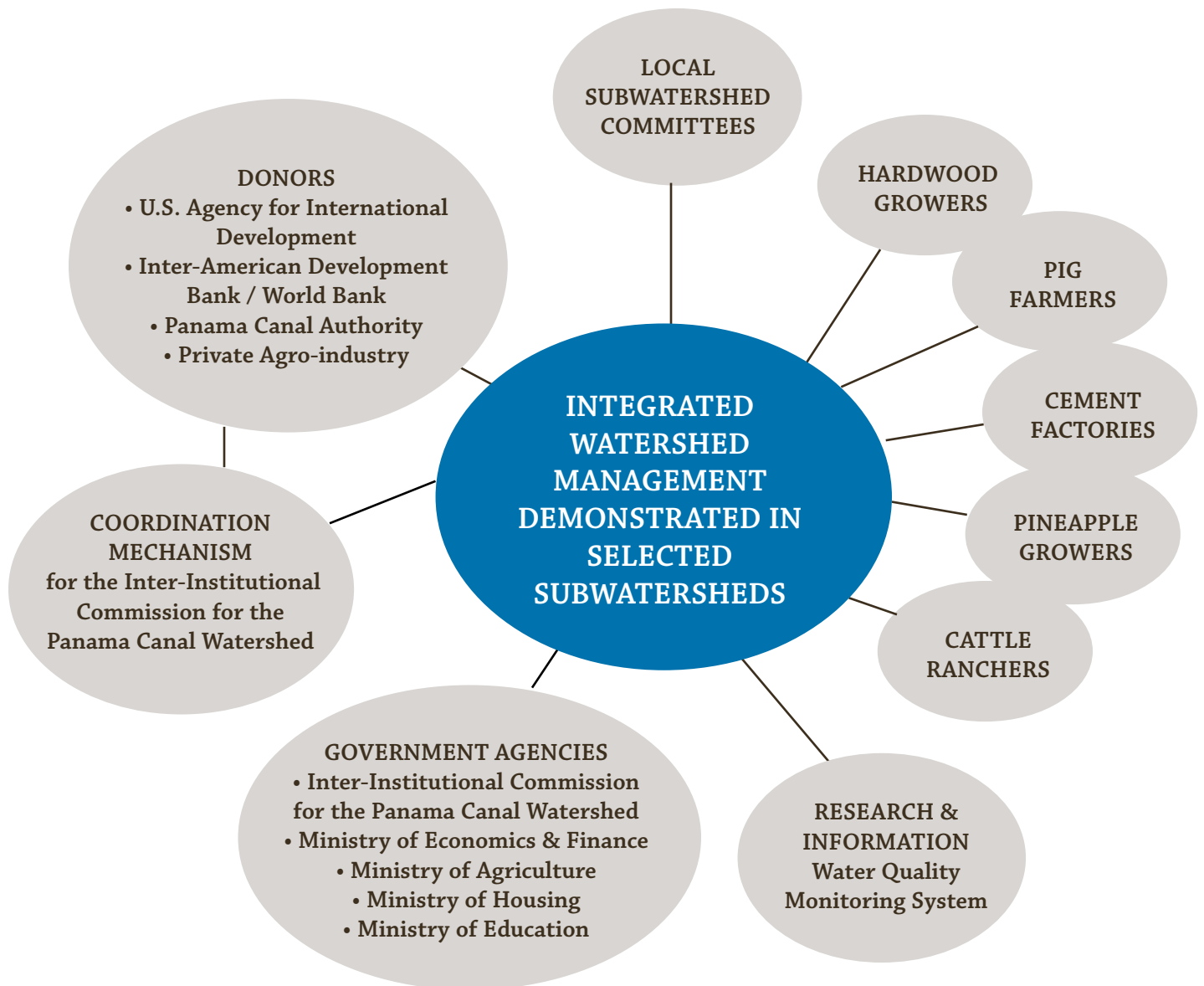
Catalyze Coalitions and Partnerships

From the start of a project, SCALE seeks to identify and include all stakeholders involved in the issue. Through facilitated, participatory meetings such as a Future Search[14] workshop, SCALE puts a priority on

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[14] Future Search is defined as "a planning meeting that helps people transform their capability for action very quickly. The meeting is task-focused. It brings together 60 to 80 people in one room or hundreds in parallel rooms." Future Search Network, "What Is Future Search?" Future Search, http://www.futuresearch.net/method/whatis/index.cfm (accessed April 29, 2005).

FIGURE 7

PANAMA INTEGRATED WATERSHED MANAGEMENT
PROGRAM STAKEHOLDER MAP

LOCAL SUBWATERSHED COMMITTEES

HARDWOOD GROWERS

PIG FARMERS

DONORS
- U.S. Agency for International Development
- Inter-American Development Bank / World Bank
- Panama Canal Authority
- Private Agro-industry

INTEGRATED WATERSHED MANAGEMENT DEMONSTRATED IN SELECTED SUBWATERSHEDS

CEMENT FACTORIES

PINEAPPLE GROWERS

COORDINATION MECHANISM
for the Inter-Institutional Commission for the Panama Canal Watershed

CATTLE RANCHERS

GOVERNMENT AGENCIES
- Inter-Institutional Commission for the Panama Canal Watershed
- Ministry of Economics & Finance
- Ministry of Agriculture
- Ministry of Housing
- Ministry of Education

RESEARCH & INFORMATION
Water Quality Monitoring System

Source: Academy for Educational Development (unpublished GreenCOM project document).

FIGURE 8

THE SCALE PROCESS

MAP THE CONTEXT

Identify stakeholders and leverage points for action

CATALYZE COALITIONS

Assess process and impact, strengthen stakeholder leverage points

VALUE

Positive Impact: Environment, Livelihoods, Civil Society Participation & Governance

Commit to a common goal

Apply multiple social change methodologies

Negotiate collaborative, sustainable solutions

CREATE SOLUTIONS

ACT

Source: Academy for Educational Development (AED), *Going to SCALE: System-wide Collaborative Action for Livelihoods and the Environment* (Washington, DC: AED, 2004), 6.

building partnerships among people and institutions not normally considered in project design, as well as stakeholders who are typically included. Meetings range from fifty to several hundred participants and often include representatives of government ministries, small land holders, the private sector, universities, local NGOs, and other donor agencies to mention only a few. Examples of the methodology's ability to bring a wide variety of stakeholders together include an integrated watershed management program initiated by GreenCOM in Panama and GreenCOM's program on illegal logging in Indonesia. Each of these projects addressed a single issue by bringing together a coalition of actors from hog farmers and Panamanian government officials to forest users and Indonesian NGOs. The SCALE approach is a

contrast to programs that focus on families, individuals, or a single community. With SCALE, the objective is to involve a much larger segment—often at a national or regional level—of the population. Bringing together diverse peoples and institutions fosters innovative ways of examining and exploring solutions and ensures broader support for development projects. In other words, the SCALE approach starts large and grows larger by promoting a variety of actions and projects that involve a significant number of people and increase the linkages between them.

Create Collaborative, Sustainable Solutions

By bringing together a large group of diverse stakeholders, SCALE helps participants develop a set of strategic objectives and indicators that are prioritized according to local needs. The partnerships formed earlier are used to create collaborative solutions that benefit all stakeholders in some way. The stakeholders define their own objectives and measures of success, and solutions are also formulated to "address policy, structural, technological, economic, social, and environmental aspects of the issue" that were identified during the context mapping stage.[15]

Act

During implementation, SCALE utilizes a method of constant reinforcement and evaluation to maintain project buy-in and group collaboration. The use of a variety of social change methods helps stakeholders achieve goals and measure success by identifying new opportunities for partners to collabo-

rate, expand project reach, and leverage influence. In addition, efforts are made to identify, develop, and use local resources (material and personnel). A balance is struck between "achieving objectives" and "strengthening process" to build stakeholders' capacity for decision making and collaborative action over the long term. As an end result, objectives are reached in conjunction with increased participant capacity to move forward on other issues.

Social change and communication methodologies employed during this phase support both the behavior change of participants and outreach to new members. A basic premise of GreenCOM is that change occurs when "small steps" outside individual and community comfort zones are instigated. As a result, current participants are more likely to agree and enact the proposed change and new members are attracted by the examples and non-threatening change occurring around them. The end result is new stakeholders, increased complexity, and scale.

Value

The final phase of SCALE provides not only for analysis of the implemented project, but also for participants to continue working together on the issues identified during the first two phases. Accordingly, for proper evaluation to occur, local people must lead the evaluation as active participants and analysts. This builds their ability to analyze and solve problems, thereby providing further reinforcement for refining the

"The SCALE approach is a contrast to programs that focus on families, individuals, or a single community."

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[15] Academy for Educational Development (AED), *Going to SCALE: System-wide Collaborative Action for Livelihoods and the Environment* (Washington, DC: AED, 2004), 11.

current project or developing a new project together as a group. This closes the circle on a process that is constantly catalyzing, reinforcing, and reaching out. The SCALE process has been successfully implemented in Indonesia to address illegal logging, in Jordan to address water demand management, in Tanzania to address natural resource protection, and in Panama to address watershed management.

An example of a hypothetical agriculture extension stakeholder map (using the SCALE methodology) is presented in Figure 9. This illustration maps the context of an on-farm water management problem, showing all of the potential stakeholders and related secondary players. Creating such a map would allow lead players to organize and identify intervention points for on-farm technology change, modes of transition, and input or demand points. This hypothetical situation highlights the potential usefulness of the SCALE approach in agriculture extension.

HYPOTHETICAL AGRICULTURE EXTENSION CONTEXT MAP
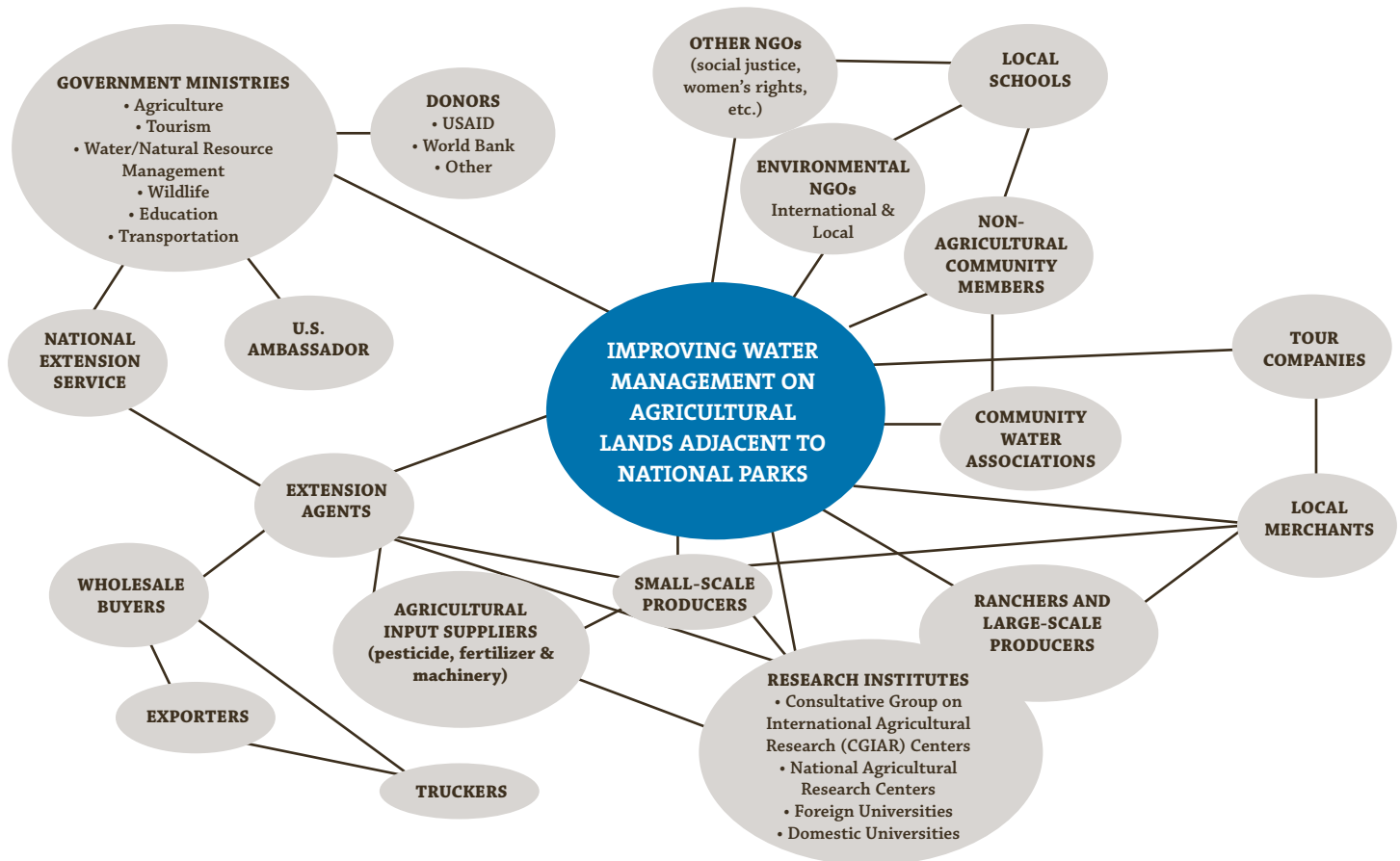
Source: Academy for Educational Development (unpublished GreenCOM project document).

TARGET

The USAID-funded TARGET (Technology Applications for Rural Growth and Economic Transformation) program focuses on creating and accelerating opportunities for rural agricultural growth in Africa. Currently, there are six projects underway in sub-Saharan Africa on issues as diverse as the adoption of new legume varieties and hybrid maize, microdosing of fertilizer, and peri-urban dairy farms. Although none of these projects has a defined methodology for achieving scale, all six utilize methods discussed in the preceding pages—especially the ideas of broad reach and "nodes" of distribution—to reach a large number of participants. Each project involves not only a research institution developing and disseminating new crop varieties or technologies, but also a long list of partners (universities, NGOs, national and international governmental organizations, and private enterprises, both foreign and domestic) who play key roles in either the dissemination and reinforcement of the new technology or in providing other means of assistance to the target audience from access to markets and products to the formulation, implementation, and enforcement of national policies. Perhaps the key to the success of the TARGET projects to date has been their outreach to a broad range of participant organizations.[16]

For example, one project in southern Africa to introduce stress-tolerant maize varieties has involved more than forty separate agencies and institutions to reach scale, or a final adoption rate of 250,000 small farmers in nine countries. Using a "mother-baby" strategy of implementation, the project reaches a wider audience than traditional T&V or extension farmer training. "Mother" plots (large nodes) are planted and maintained by partner agencies, while "baby" plots (small nodes) are small sections kept by individual farmers/participants in nearby areas (within walking or biking distance of the mother plot). Following this methodology, first-year baby plots become second-year mother plots (controlled by the small farmer participant), increasing the number of nodes and reach of the project as farmers become familiar with the new technologies and transfer spreads through word of mouth and farmer-to-farmer visits (Figure 10)[17] and the use of additional publications designed for local use. Examples of these publications are comic books, informational fliers, and color-coded maps designed to indicate appropriate varieties for different climatic regions.

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16 Eric Witte, "Technology Access Fund (TAF)" and "TARGET (Technology Applications for Rural Growth and Economic Transformation)" (unpublished project summaries, USAID, 2004).

17 International Maize and Wheat Improvement Center/CIMMYT, *Farmers' Voices Are Heard Here* (Harare, Zimbabwe: CIMMYT, n.d.).

FIGURE 10

MOTHER-BABY TRIALS

YEAR 1   YEAR 2
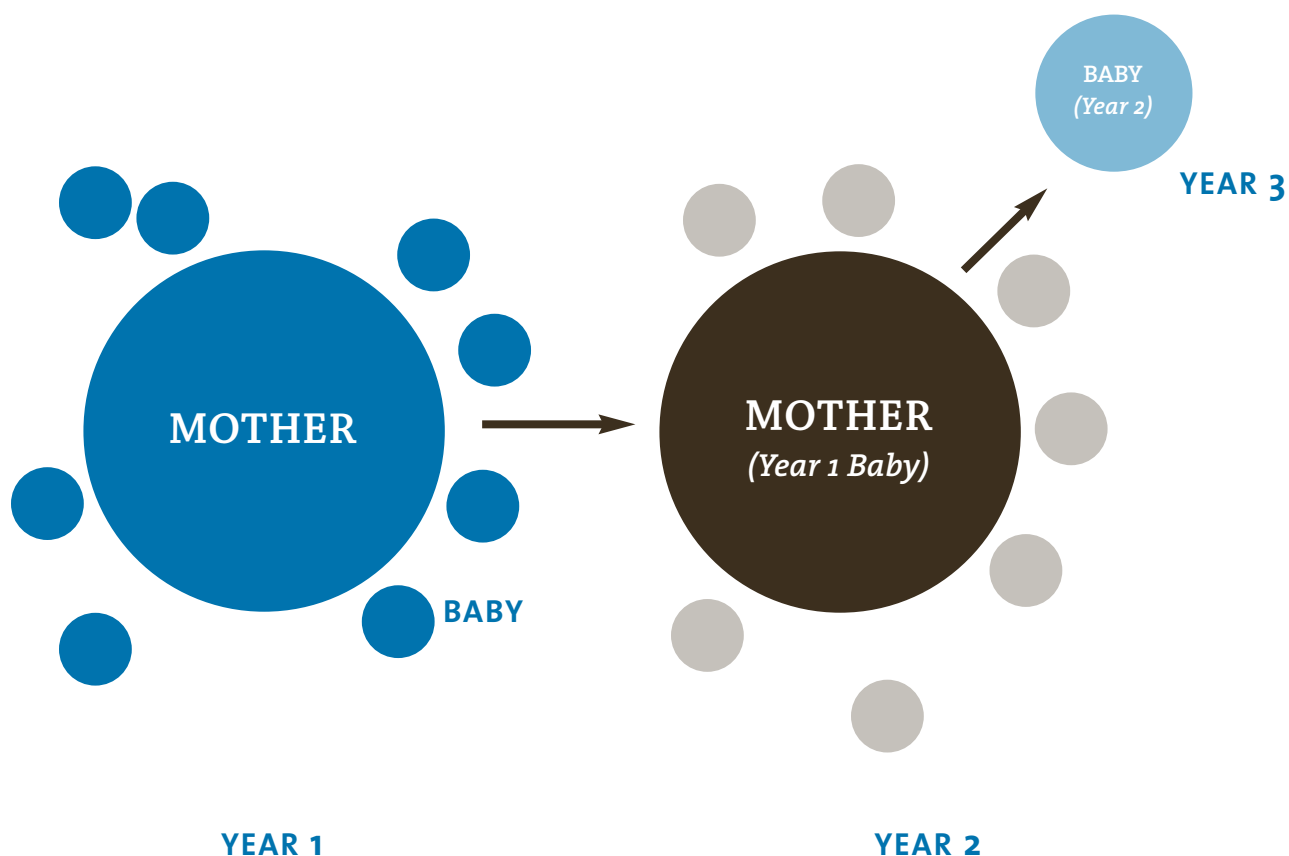
Source: Adapted from International Maize and Wheat Improvement Center/CIMMYT, *Farmers' Voices Are Heard Here* (Harare, Zimbabwe: CIMMYT, n.d.).

This approach is similar to one utilized by Peace Corps volunteers in agricultural extension programs in Senegal and else-where. Using a pilot (or mother) farmer and follow-on projects in the second year, volun-teers achieve scale in much the same way—word of mouth and farmer-to-farmer visits—as the African maize project described above. According to its associate director for agriculture, the Senegal Peace Corps program, in operation since 1995, reaches seven hundred to fifteen hundred new farmers each year.[18]

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18 Correspondence with Famara Massaly (associate Peace Corps director for agriculture, Dakar, Senegal), May 2004.

Lessons Learned for Widespread Adoption

The preceding discussion of past and present approaches to achieving scale in agricultural development points to several common traits of successful programs:

1. Early participation by a broad range of stakeholders representing not only the government (national and local) but also the citizenry, businesses, NGOs, and other institutions.
2. A focus on coalitions and collaborative efforts by disparate groups that have identified shared goals and objectives.
3. A demand-driven, participatory approach to prioritization of issues and activities.
4. Emphasis on building local capacity to design, implement, monitor, and manage programs.
5. Realistic and achievable objectives within the constraints of locally available resources and skills.
6. Continuous evolution of issues and projects and the ultimate goal of achieving scale.

As part of USAID's efforts to apply these lessons, a new demand-driven, participatory initiative called Agricultural Partnerships for Productivity and Prosperity (AP³) was launched in the fall of 2004. AP³ builds on the SCALE methodology described earlier in this paper and is supported by many of the other frameworks and lessons discussed here. It helps USAID missions address critical agricultural and natural resource issues at the country level by involving multiple stakeholders from different sectors. The core aspects of the AP³ approach include:

- **Fostering** early participation by all stakeholders along the agricultural value chain: government (national and local), farmers, input markets, businesses, producer organizations, NGOs, and private sector (including agribusiness, exporters, transporters, etc.)
- **Identifying** common goals among groups that do not usually work together and fostering the motivation to build coalitions and engage in collaborative action to address shared concerns.
- **Focusing** on a demand-driven approach to prioritizing investments in time and resources.
- **Empowering** local capacity to design, implement, manage, and monitor new enterprises that evolve from the process.
- **Establishing** realistic and achievable objectives that are compatible with local abilities, resources, and cultural practices.
- **Implementing** strategic integrated communications activities.

Final Thoughts

The methodologies discussed in this paper attribute their success to a reorientation of the project design process from one based on directives from an outside entity to a demand-driven approach that allows communities to establish their own priorities and determine their direction for increased livelihoods and development. The success of the newest approaches has not yet been fully demonstrated, but the examples provided in this paper and reviewed as background material support the notion that the principles on which they are based are likely to increase the sustainability of any agriculture or natural resource project they are applied to.

Perhaps a set methodology for scaling up agriculture extension is not the holy grail for development agencies. As many of the authors and designers of the programs researched in this paper state, there is no one-size-fits-all for achieving scale. However, the intent of this summary paper is to identify the common practices employed in these programs that helped to determine their success. It is clear that a participatory, demand-driven approach to extension is likely to yield larger returns for funding outlays than traditional efforts that did not follow this path.

These new strategies for extension and achieving scale may be further supported and enhanced through appropriate social and communication methodologies and the use of information and communication

technologies[19] developed alongside and coordinated with extension efforts. The challenge facing many donor agencies is to begin to replace the ineffective, small-scale methodologies used in the past with large-scale, participatory approaches such as GreenCOM's SCALE methodology and a corresponding strategy for the use of information and communication technologies in the agricultural sector.

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[19] For a list of information and communication (ICT) resources see the bibliography, which provides information on various studies, documents, databases, and training materials for implementing successful ICT programs.

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• FAOSTAT (FAO statistics), http://faostat.fao.org/default.jsp?language=EN
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